

THE
PALESTINE EXPLORATION FUND.

PREFACE.

THE report of Lieut. Conder, dated June 21st, 1873, contains an account of the filling up of the Survey west of the watershed to the old boundary, leaving only a few weeks' work on the Plain of Sharon. From the work Mr. Conder has selected twelve places (plans and sketches of some of them have since been received at the office) for special report: of these only two sites were previously known, and the identification of the remaining ten remains to be ascertained. The remains at Dayr Asruhr are exceedingly interesting, especially if, as Lieut. Conder thinks, they prove to be of Herodian date. It is illustrative of the need of such a Survey as ours that this splendid ruin, standing on a hill only ten or twelve miles from Nablús, should have wholly escaped observation. It consists of a street with houses, cisterns, and towers, a public building of some kind, and the remains of a wall. These ruins will probably be visited again. At Dayr Allah our party found the ruins of another Roman town, but not in so good a state of preservation. Tombs of three kinds (see *Quarterly Statement*, Jan., 1873, p. 23) were found at Kh. Fakhakhír; buildings of apparently Roman date were found at Karáwa ibn Hassan. Sergeant Black discovered also here a very remarkable tomb called the Dayr el Derb, while Corporal Armstrong discovered another equally curious, though not so large, at Kh. Kurkush, in the wildest part of the hills. The tombs at Abúd described in this report were visited by Major Wilson in 1866, as was also Tibneh, where is the traditional tomb of Joshua. Lieut. Conder's account of this will be read with the greatest interest. We must call attention especially to his tracing of the old Roman road. Those who have read the volume issued

last year by the Committee, "Our Work in Palestine," will remember the Roman road in the old map, there reproduced from the *Tabulæ Peutingerianæ*. It branches off at Gophna (there spelt Cophna), and while one road continues straight through Neapolis to Cæsarea, the other strikes west to Lydd (Luddis), and then turns north to Cæsarea. It was by this latter road that Saint Paul was taken by night to Antipatris (Kefr Saba). Captain Anderson surveyed it as far as Abûd, where Lieut. Conder has taken it up and traced it in its two new branches, both of which are rudely represented in the "*Tabulæ*," till he lost them in the plains.

Our illustration this quarter gives the result of Mr. Schick's long-continued examination of the rock levels of Jerusalem. It contains the rock levels found by Major Wilson, Captain Warren, Mr. Schick himself, and the latest work in the city. From these observations, about two hundred in number, Mr. Schick has constructed a model, now in the office of the Fund, and Lieut. Conder has made the contour map of the city which accompanies his memoirs on the subject.

The notes on Lieut. Conder's Baalbec report do not properly belong to the work of the Fund, as Baalbec lies out of our district. It may be remembered that more than a year and a half ago letters appeared in the *Times* calling attention to the danger threatening the columns, and it was then resolved, before the American Expedition went out, that the officer in charge of the Survey should be asked to report, whenever practicable, on the actual condition of the ruins.

Mr. Tyrwhitt Drake, whose health required a visit to England, has now returned to Palestine completely restored. M. Clermont-Ganneau goes out immediately. He will begin his work at Jerusalem itself.

THE SURVEY OF PALESTINE.

LIEUT. CLAUDE R. CONDER'S REPORTS.

XIV.

BELAD EL JEMAIN TANI BENI SAB—UNEXPLORED COUNTRY.

BEYROUT, *June 21st, 1873.*

Report of Progress.—Since reporting on the work done up to our camp at Mukhalid our time has been so fully employed, the amount of work so large, and the rate so rapid, that I have been altogether unable to attend to anything beyond the management of the field work and of the expedition generally.

The rate of work has been very satisfactory, and far beyond anything I expected with my original party. The country gone over is almost entirely unknown, and thus I hope the present report will be of greater interest than any I have yet sent in.

Leaving on the 7th of May our camp at Mukhalid, we established ourselves at Kefr Zebad Bidyeh and Rantis, breaking off work finally on the 7th of June, and retiring to Lebanon to pass the hottest portion of an exceptionally hot summer. In that time we succeeded in bringing the work back to its old boundary, filling in all the hill country W. of the watershed, and only leaving some three weeks' work in the plain of Sharon, which Dr. Chaplin forbade us to undertake so late in the year. The Ordnance Survey thus extends over 1,800 square miles, 3-11ths of the whole area of Palestine, whilst the monthly rate since leaving Haifa has been close upon 180·89 miles, being treble that originally obtained, and an increase of nearly 30 per cent. on the maximum which I was able to reach last year. This result cannot fail to be encouraging to all concerned. Were my party doubled by the addition of one more N.C.O. before the recommencement of our work, I think I could almost promise an average rate of 240 square miles per month, which would represent the completion of the map in two years, working ten months in the year.

The following plans and sketches are obtained, and at Damascus I hope we shall have time to work them out.

1. *Dayr Asruhr.*—Remains of a large town, probably of Herodian period. Plans of the two principal buildings. Sketches of detail. Special survey of the whole site. Plans of rock-cut tombs.

2. *Kh. Kurkush*.—A cemetery of well-finished tombs. Plans, sketches, measurements of details, &c.
3. *Karāwa ibn Hassan*.—Plan and sketches and details of a very fine tomb, well preserved. Plan of a church (?). Two crusading buildings in the town.
4. *Mokat'a Abud*.—A cemetery of well-finished tombs. Plans. Measured sketches of detail. Painted interior, well executed in cement. Greek church in village.
5. *Tibneh*.—Special survey of the site of town. Plan of so-called Joshua's tomb. Sketch of the exterior.
6. *Dayr Kala'ah*.—A finely-preserved 5th century monastery. Plan, elevation, sketches of detail, ornamentation of chapel, &c.
7. *Dayr Sam'an*.—A similar building, less well preserved. Plan and details.
8. *Dayr Arrabeh*.—A similar building. Plan alone traceable.
9. *El Duayr*.—Similar building, but smaller plan traceable.
10. *Kh. Fakhakhir*.—Tombs, and a building, possibly a synagogue.
11. *Dayr Allah*.—Remains of a town, with a small temple, close to the Roman road to Jaffa.
12. *Nebi Yahyah*.—Plan, section, and measurements of all the details.

Of this list of places visited, surveyed, and measured during the course of one month, only two sites were previously known, the rest are, I think I may state with some certainty, quite new discoveries. I am sorry I cannot add an inscription to the list.

In geology we have found two more basaltic outbreaks, and collected some valuable fossils.

The reasons for the increased rate of work are various. The triangulation has occupied much less time than it did at first, because the triangles have been larger, the points therefore fewer; because on the east we had a number of old points which it was not necessary to visit in order to be certain of their suitability, and because of a very strict economy of time in the arrangements, the number of days consumed by this part of the work being reduced to a minimum. Then, also, the detail has been more rapidly pushed on, partly because of greater practice, partly by reason of the large tracts of sandhills along the sea-coast, which can be very rapidly surveyed. The addition of Corporal Brophy to the party cannot be counted, as he has not as yet been able to assist; nor does the execution of a share in the sketching by myself from the last two camps make any very large difference; the work as it stands is that of the original party of last year. Against the facilities of work must be balanced certain disadvantages: the unusual number of plans and special surveys which it was necessary to make; the greater heat on the low hills and in the plains, with mirage consequent to it; finally, the extremely wild and difficult nature of the country through which we passed last.

A short description of the principal sites mentioned in the above list may prove of interest; they include towns, cemeteries, roads, and convents.

Dayr Asruhr.—This interesting site, for which I obtained four various names, of which that chosen seems to me the most probably ancient, is situate on a hill about ten or twelve miles W. of Nablûs, in a fine and commanding position. It seems to have altogether escaped notice, and perhaps from this reason is in a better state of preservation than any similar ruin in the country. Of the character of the details an archæologist alone can judge, but I think I may venture to assert that it dates as far back as Herodian times, an opinion strengthened by the discovery of a much-defaced bronze coin of the time of the Roman emperors—the reverse a wreath with SC, the obverse a head.

The ruins occupy about a square mile, and seem to have been surrounded with a wall. A large building facing north and south exists at the north-west corner of the town, and a second, facing at 107° on the compass, is found on the east. The north wall of the former is standing in parts to a height of 23ft., and a fine solid semicircular arch, 14ft. span with 13 voussoirs, marks the position of an entrance. The rubbish in this part, which is level with the springing of the arch, must be of some considerable depth. The site, if identified, might be worth special study and excavation. The wall consists of stones of fair size, well cut and laid. The height of the courses is very irregular, and many stones are of great length as compared with their height. Of those measured at the corner the length varied from 5ft. 3in. to 1ft. 6in., and the height from 1ft. 11in. to 3ft. 5in. They all appear to have been drafted, a well-finished shallow draft, 2in. to 3½in. broad, the central boss being well worked to a perfectly plane face. In many cases the draft is hardly traceable from age, and this, in connection with the finer finish, the unusual proportions, the semicircular arch, and the flat lintels and classic mouldings of the doors to the rest of the building, make me suppose the masonry far older than the coarser and rustic work of the Crusaders who built Athlît and Cæsarea. The building seems to have been unsymmetrical in plan, with a large hall leading through to the southern door, the jambs of which still remain, whilst on the west three entrances led to smaller apartments. The east wall is not traceable above ground.

Passing along what seems to have been a street, with well-built houses, cisterns, and small towers, the foundations alone remaining, we find on the east the remains of what I suppose must have been a public building, though it can hardly have been a temple, facing, as it does, roughly westward, but not exactly to any cardinal point. It appears to have stood in a court, surrounded by a terrace wall of fine masonry; the walls are still standing for two or three courses, and are nearly 7ft. thick. The building is 65ft. long and 44ft. broad, the most curious detail which one at first notices being two great blocks nearly 10ft. high, but only 2ft. square, which stand up *in situ* at the north-west and south-west corners. Their bases are below the general level, and are ornamented with a classic moulding.

I should imagine that the floor within this building was at a higher

level, and that steps originally led up in front, but the accumulation of rubbish does not allow of this being well seen. A cross wall forms a sort of porch or Pronaos, thus giving the impression that this was a temple. A large block fallen within measures 11ft. in length. Various shafts, about 2ft. diameter, lie without, hence one is led to suppose that there were three walks about 10ft. wide, as thus only could the width be spanned; excavation might bring to light the bases of these pillars. I noticed a curious indented joint or joggle in the exterior wall, of which I retained a sketch; it disturbs the horizontal joint as well as the vertical. We further found a stone, 5ft. long and about 2ft. square, with a flat pilaster cut on either side, with a base and capital of debased, or Jewish classic appearance, cut in low relief. From its size this must have either belonged to a window or to a set of pillars in a second order, or clerestory. Remains of a tessellated pavement also exist. This building stands above a deep broad valley, on the opposite side of which are well-cut rock tombs, with loculi placed parallel to their walls—the cemetery of the town. Following the wall we find cisterns, birkets, a small tower of stones over 10ft. long, and a little vault or tomb into which two columns have fallen. Vaults are said to exist below the town, but this is unlikely. On the south-west and west the rock is scarped below the apparent remains of a wall, and a projection in one part seems to have supported a small turret.

These notes, I imagine, will lead to the conclusion that we have here recovered an interesting and perhaps important site.

Dayr Allah.—This also seems to have been a Roman town, but smaller, and with no signs of such fine buildings having existed in it. The ruins extend over about 300yds. length and breadth, the principal being walls of fair-sized stones undrafted, and a door with a plain lintel 7ft. long. Two bases of pillars belonging to some building facing east remain, they are 6ft. apart, and 19½ in. diameter. Several shafts and capitals of a very curious character lie near. This appears to have been the temple.

This site is situate close to the Roman road, which we have now traced to the plain, the famous road to Antipatris which Captain Anderson surveyed as far as Tibneh. From this point it continues along the ridge until it arrives near the village of 'Abud. Here it separates into two, the first passing along the ridge and leaving, just to the south, the tombs of which I shall shortly speak, descending a broad valley and continuing its course till it reaches the plain near Mejdél, south of Ras el 'Ain; the second descending at once from 'Abud, and passing Rantis and Dayr Allah, is lost in the plain. This branch evidently led from Jaffa, and formed one of the lines to Jerusalem, a second more direct existing farther south.

Nothing is more striking than the contrast between such a road and the modern Arabic highways. The Romans, as well for military as for engineering reasons, followed the ridges, avoiding the highest points, and gradually descending the valleys where necessary. The masterly

manner in which they are engineered in a country so difficult as is the mountain district of Judæa might give valuable indications for the construction of future roads, which might be simply reconstructions on the same line. An Arabic road meanders in a meaningless manner over hill and valley, now plunged between heights too distant for the advancing party to occupy easily, then climbing straight over a summit without any very apparent reason. The Roman roads were very carefully made, the rock being covered with a regular pavement of partly-dressed stones still remaining in places. This, with the existence of side walls in some cases, and of broken and effaced milestones, enables us easily to distinguish them. Of all roads they are probably, however, the worst in the country to follow in their present state, as, the pavement being gone, nothing but flat slabs of slippery rock is left, on which the horses stumble fearfully. Another of these roads, leading from Samaria to Kur, has also been recognised by its pavement and engineering. It is doubtful whether they were intended in all cases for chariots, though those in the plain show marks of wheel ruts in many places.

Kh. Fakhakir.—Tombs of three kinds exist here. The ordinary Jewish tomb, with loculi running in from the sides of the chamber; the sunken tomb, with loculi on each side and a heavy block covering it above; finally, a species of tomb uncommon in the country we have gone through: they are cut in detached rocks, and consist of an arch 8ft. diameter and 6ft. deep, thus forming an alcove of a semicircular section open in front. The tomb itself is sunk in the floor of the alcove, and was covered with a slab; a niche for a lamp is generally found at the back. Fragments of sarcophagi, with lids and ornamented sides, exist near, and amongst the ruins is a building about 50ft. square, facing approximately to the cardinal points, and divided into three walks by pillars, the northern row consisting of four, the southern of two, with a partition wall occupying the position of the others. The pillars are 7ft. 6in. high, and 18in. diameter, with base and capital of very simple mouldings in low relief. The plan is rendered irregular by the addition of a small chamber at the south-east corner. In the walls, the foundation of which only remains, a stone was observed 2ft. 6in. long, with a draft of the ordinary dimensions, and a well-finished face. The entrance to the building must have been on the west, but there seems reason to conjecture that this may have been a small synagogue.

Karāwa ibn Hassan.—This village was originally named according to the Shaykh Sham el Tawīl, and contains two large buildings, probably of Roman origin, the one being a reconstruction, the other an original edifice. The former is a fine tunnel vault, the door spanned by a lintel covered with defaced ornament, whilst drafted and undrafted stones, portions of a cornice, and on one stone an inscription which appears to be Cufic, are built into the outer wall indiscriminately. The second building, forming a modern residence, is a fine tower about 40ft. square,

the walls standing to the height of from 20 to 30ft, and the interior divided into six vaulted apartments, which are used as storehouses; these are all roofed in tunnel vaults, with semicircular arches of moderate masonry. The stones of the outer wall vary in length from 18in. to 5ft., and in height the same; all are surrounded by a boldly-cut draft an inch deep and 4 inches broad; the joints are well laid with a thin bed of good mortar, and the faces are finished plane. There is, however, no further indication of the date of the building, but no rubble such as the Crusaders generally mixed with their ashlar is visible in any part.

A third ruin exists under and beside the mosque, which is a large one, and there seems to me great probability of its having been a church, though subsequently used as a birket. It is now sunk below the surface, which no doubt has risen; it faces east and west, and is built of fine undrafted masonry with slightly projecting pilasters of classic profile; the height of the courses of masonry is very irregular, but the joints are finely cut. A cross wall of later date shuts off the east end at a distance of about 40ft., but a great vault, probably the apse, is reported to exist under the mosque. Fragments of cement adhere to the walls but form no part of the original design.

Within half a mile of this village, where Christian and Roman remains seem thus mingled together, Sergeant Black discovered a tomb, perhaps the most perfect, as a type, in the country, which is known locally as the Dayr el Derb (a meaningless name, probably not ancient). A well-executed frieze of Doric style, the tryglyphs separating rosettes all of different character, runs along the scarped face of the rock for about 50ft.; the porch is supported by two Ionic columns and two Doric pilasters of that peculiar type which Mr. Ferguson refers to Herodian times. The interior chamber contains three Jewish loculi at its further end, whilst two side chambers, one unfinished, were made in the second fashion, with sarcophagi parallel to the sides. The workmanship throughout is excellent, the chambers large and higher than usual; the walls of the porch are cut to represent drafted masonry, as in the Tombs of the Judges. The frieze is not quite finished, and is broken in the middle, whilst one of the side chambers is still imperfect, but with these exceptions a finer and more complete monument I have not yet seen in the country.

It is curious that where so much labour has been bestowed on the work not a letter of inscription was cut to commemorate the distinguished family for whom it must have been prepared; but this is always the case it would seem in Palestine, as in the instances of nearly all the tombs at Jerusalem already known.

Kh. Kurkush.—Hidden away in the wildest part of the hills, surrounded with deep ravines, and at some distance from any spring or ruin, Corporal Armstrong came upon another group of tombs, one being almost as perfect as, though smaller and less well executed, than the Dayr el Derb. The principal tomb has the same arrangement, but

is peculiar in having two recesses cut in the sides of the porch; the shafts of the central column are gone, the Ionic capitals remain, the side pilasters are seemingly unfinished, the door is ornamented with a semi-classic entablature in low relief. One peculiarity which is very puzzling is the appearance of a number of rough scrawls cut on pillars and walls in every direction; they represent camels, goats, cows, men riding donkeys, &c., all executed with the charming simplicity of outline generally observed in infantile productions; one would indeed pass them over as the work of wandering Arabs were it not for the fact that on each pilaster the seven-branched candlestick is cut in precisely a similar style. Nor do they bear any resemblance to the simple tribe marks of the Bedouin which occasionally occur over the rock-cut tombs.

'Abud.—To the north of Tibneh, on the top of the lower Judæan range, this little village stands beside the Roman road. It contains 400 Greek Catholics in a population of 500, and the cross is roughly painted with other ornaments over almost every door. A church of considerable size, which, though restored, was, as the Khuvi assured me, very ancient, stands in the centre, and at a little distance on a stony knoll above a fine tank full of rain water are the remains of a little chapel. The spot is called Barbára, probably in honour of St. Barbara, and is a shrine to which pilgrims come from all quarters. I was not, however, able to obtain any tradition as to the place.

Following the road north-west for about a mile, we pass the Mokata' 'Abud on the left, another system of very fine and perfect tombs. The porches of the two principal resemble in style that of the Tomb of the Kings at Jerusalem, but they are better preserved, and more profusely ornamented. In one chamber, especially, a hard cement or enamel lines the walls and roof, and is well painted in colours, which, though dimmed by age, are distinguishable still. The spaces between the loculi are painted in panels of red and white; black lozenges and red squares on a white ground are placed above, and a twist of white and yellow on a black ground runs above all.* On the side where there are no loculi the wall is divided into alternate panels of white and red, but one of these remains unfinished, with three brush marks, showing that the painter had marked it for its proper colour, namely, a dark reddish maroon. The details will be best understood by my drawings, which will be finished, copied, and forwarded at the earliest opportunity. Arab tribe marks were remarked on the walls of the porch, but no designs like those previously noticed were to be found.

Tibneh.—A day was devoted to a visit to this interesting and important site. It is unnecessary to remind your readers that it was identified (though not correctly described) by Dr. Eli Smith with the Timnath Serah chosen by Joshua as his inheritance upon division of

* A sketch of this painting was made by Major Wilson in 1866, and is now in the Office of the Fund.

the land. "Very marvellous," says St. Jerome, "is it that the distributor of the possessions should have chosen for himself so rugged and mountainous a spot" (Epit. Paulæ, § 13), and his words apply to Tibneh very aptly indeed. Of all sites I have yet seen, none is so striking as that of Joshua's home, surrounded as it is with deep valleys and wild rugged hills.

An oval tell with steep and regular sides forms the site of the town. On the south a gentle broad valley separates it from another hill, in whose northern face the necropolis^{*} is excavated; a little plateau below the town stands at the head of this valley, and separates it as a shed from a second descending westwards. The Roman road passes between the plateau and the tell, and not far south of it stands, perhaps, the oldest and finest tree in Palestine.*

This noble oak, which must be upwards of thirty feet in height, and beautifully symmetrical, is all the more striking to the sight after a residence in a country but sparsely scattered with olives and ballut of no great size. It is covered with foliage, the leaves being very small, and has received the name of Shaykh Taïm from the natives. A modern and an ancient well exist close to it, but the supply of water for the town must have been drawn from the 'Ain Tibneh, a fine spring, breaking out of a rocky channel, on the northern slope of the tell. If, indeed, political or other reasons rendered it desirable for the ruler of Israel to choose this portion of the country for his residence, no better spot than Tibneh could be found, for the country round is destitute of spring water for a considerable distance.

Of the ancient town of Tibneh nothing but a wall of drafted stones, three or four only visible above the surface, remains; the Arab village, which subsequently occupied the same position, being in its turn much damaged by age. The necropolis is, however, still visible, though almost every tomb has its porch so filled with rubbish that only the top of the little door into the tomb is visible. It might perhaps be interesting to excavate these tombs, but it is doubtful whether they are not all choked within as without, though we cannot positively affirm that some have not their doors still intact. Much time and labour would, however, be required.

I am aware that the tombs have been already examined, and that photographs of the ornamentation exist.† I, however, thought best to measure carefully the principal one, and to obtain dimensioned sketches of the details of ornamentation.

Joshua's tomb.—This is certainly the most striking monument in the country, and strongly recommends itself to the mind as an authentic site. That it is the sepulchre of a man of distinction is manifest from the great number of lamp niches which cover the walls of the porch; they are over 200, arranged in vertical rows, giving the appearance of an ornamental pattern, and all smoke-blackened. One can well imagine

* See Photograph, Old Series, No. 107.

† Photographs, Old Series, Nos. 108, 109.

the wild and picturesque appearance presented at any time when the votive lamps were all in place and the blaze of light shone out of the wild hill-side, casting long shadows from the central columns. The present appearance of the porch is also very picturesque, with the dark shadows and bright light, and the trailing boughs which droop from above.

Entering the low door we find the interior chamber to be a square, with five loculi, not very perfectly cut, on three sides. The whole is quite unornamented, except by four very rough brackets, supporting the flat roof. A broad step or divan (for want of a better word) runs round the chamber, and the loculi are level with this; the depth of the centre we were not able to ascertain, in spite of excavation.

On becoming accustomed to the darkness one perceives that the central loculus at the back forms a little passage about 7ft. long, 2ft. 6in. high, and 3ft. 4in. broad, through which one creeps into a second but smaller chamber, 9ft. 3in. by 8ft. 1in. and 5ft. 5in. high.* In this, opposite to the entrance, a single loculus runs at right angles to the wall, and a single niche is cut on the left for a lamp. Here then, if we accept the site, is the resting-place of the great leader, the stout soldier, the fierce invader, who first brought Israel into the promised land. It is curious that when so large a number of travellers come annually to Palestine so few visit a spot of such transcendent interest.

The simple character of the capitals in the porch, more fitted for the carpenter's work on the tabernacle than for work in a soft stone capable of being ornamented profusely with little labour; the rough execution of the interior, and the non-appearance of the later form of "attached sarcophagi;" finally, the lamps, which adorned the façade, and the absence of any ornamentation similar to that already mentioned in the other tombs, all seem to point to the probability that the monument here described may be as certainly looked upon as Joshua's tomb as may the Modin sepulchre, which I wrote on in a previous report, be considered the resting-place of the Maccabean heroes.

Dayr Kala'ah.—This important ruin is shown correctly on Vandervelde's map, although he does not appear to have visited it. I am not aware that it has ever been noticed by other travellers. Standing on the summit of a precipitous hill, it is protected on three sides by deep and intensely rugged ravines, whilst on the east large quarries form a species of moat behind the building. A narrow path leads up to it on the west from a little plain, where no doubt the lands of the monastery lay, and passes under a projecting turret on brackets forming a species of machicouli. The building being erected on the slope, the western foundations are at a much lower level than those on the east, and a square building, with its floor at a level some 12ft. above the main part of the edifice, forms a projecting outwork on the less protected side.

The monastery faces, roughly speaking, east and west, but the wall

* A plan was made by Major Wilson.

of the chapel has a bearing of 294 deg., which is not less in error from the east line than is the Cathedral of Cesarea. The plan of the building shows a large central hall, about 80ft. in length, having the chapel (which was entered from it by a side door) on the north and a row of buildings on the south. These latter appear to have been chambers or dormitories of various sizes, the walls and even the roofs remaining in some of them. The most eastern, which is divided into two cloisters by a row of piers supporting round arches, I conjecture to have been the refectory, the remainder the cells of the monks.

The tower, some 30ft. square, is immediately east of the great hall, and is divided into four chambers, the roof of one still remaining built in rubble work, with a tunnel vaulting. Above these there was probably a second story.

North of the tower are three large reservoirs, cut in rock during the operation of quarrying for the convent itself, and subsequently completed by the building of massive walls of rubble, faced on both sides with ashlar work, and by an arched roof, the sloping bed for the haunch stones being still visible. The longest of the three is 112ft. by 34ft. breadth. Thus the roof was a work of no little magnitude.

Adjoining the reservoirs on the west side, just north of the chapel, there appears to have been another row of cells, and possibly vaults beneath. These are, however, so much ruined as scarcely to be traceable without excavation.

The details of workmanship and ornamentation leave little doubt that this fine monastery is to be ascribed to the same date as the Golden Gateway at Jerusalem, or the Church of Kalb Louseh, described by M. De Vogüé as belonging to the 6th century. Thus it may perhaps become of great importance to the archæologist, and more especially so if any mention can be found of it either in Eusebius or in Procopius. Mr. Fergusson has traced the gradual history of this early Byzantine style, and M. De Vogüé has shown how slow and gradual the development was in the East as compared with the rapid growth of the Romanesque in the West. The very remarkable architectural feature of a cornice deflected to follow the semicircular arch of a window or door is insisted upon by Mr. Fergusson as evidence of the early date of the Golden Gateway. Here, within a day's journey of Jerusalem, the same feature occurs in the Chapel of Dayr Kalā'ah, together with other details of structure not less characteristic. The cornice remains almost intact, though much worn by weather, on the inside of the east chapel wall. Its details resemble those of the Golden Gate, with one exception—the cross appears in every possible place. A broken base lies amongst the rubbish, and its profile I measured carefully for comparison with others of known date. The semicircular arches have already been noticed, and form another important evidence of date. They are all built with keystones. The doors are, however, invariably surmounted by flat lintels, on which the cross is cut in low relief; generally it is placed on a tablet after the classical manner, but in one case

the three hemispheres, which are the conventional method of representing Mount Calvary, form a foundation on which it stands. Above each of these lintels is a very flat relieving arch, formed in some cases of two stones hollowed slightly beneath, thus throwing the superincumbent weight on the jambs of the door. The same arrangement is found on a larger scale at the Double Gateway of the Haram at Jerusalem, where a cornice similar to that of the Golden Gate exists.

The ashlar work of the whole building is finely proportioned and the joints are beautifully laid. The exterior walls have drafts on all the stones, but none are found on the interior. The drafts are different in character from any previously noticed, being about 10in. broad and 2 or 3 deep. The central raised face is often only roughly finished, and the draft itself is not always regular in width or depth. The largest corner stones are 6ft. long and 3ft. high, but the average will be about half these dimensions. On the stones of the interior a number of large rudely-cut marks were visible, but different from the ordinary mason's marks, being placed irregularly on the stone, often two or three together.

Such are the main points of interest concerning Dayr Kala'ah. A thorough search in Procopius ("De Edificiis Justiniani") and in Eusebius ("Onomasticon") is most desirable, as this building must have been of sufficient importance to be mentioned among the works of either Constantine or Justinian, and its date once identified, the evidence of its architectural details would be of the greatest value in the settlement of certain disputes on this style in Palestine.

Dayr Sam'an.—North-east of the ruin just mentioned is a second, evidently of similar character, but in a far less perfect condition. The foundations alone are traceable, and show the edifice to have been less extensive and less magnificent. It has, however, one peculiar feature in a large rock-cut circular bath, 14ft. diameter and 2ft. 7in. deep, three steps leading into it from the surrounding platform.

Dayr Arraleh.—Farther south, and not far distant from Rantis, a third convent exists, the walls standing to the height of three or four courses in many parts. A central chapel with a single apse, surrounding chambers, and underlying vaults with semicircular arches, are here found again, but one difference is remarkable, none of the stones are drafted. The doors are surmounted by flat lintels, having various geometric patterns cut upon them, the cross being invariably found in the centre. A large birket exists on the west side, and two cisterns in other parts. It is remarkable that in every one of these sites no other supply than that obtained from rain water can have existed, although there are often springs a few miles off. The fathers seem to have chosen the most deserted and unfrequented spots for their retirement, possibly from other than purely religious motives, as the villages of the wild heathen must always, as now, have been placed in sites where water was most easily attainable.

El Duayr.—This ruin, situate near to Dayr Kala'ah, is the smallest

and least important of the four, but is constructed on the same plan. The entrance door to the chapel is very small, and surmounted by a flat lintel. In the other three cases the east door is entirely destroyed as in the two first, or fallen in as at Dayr Arrabeh.

Nebi Yahyah.—This curious ruin, more perfect than perhaps any in Palestine, has already been often visited and described. A photograph was taken by Captain Warren, and it is mentioned in one of Mr. Drake's reports. In visiting it for the purpose of making a plan, I found the details to be better preserved than I at first supposed, and took accurate measurements of them all. The whole is in a debased classic style, and the work is no doubt Roman.

The peculiar position makes the original use of the building doubtful, as it neither faces south like a synagogue, nor east like a temple. The bearing of the length of the porch is 253°, so that it faces, roughly speaking, north.

Nomenclature.—Although the nomenclature of the Ordnance Survey is not, properly speaking, my own department, yet, as it has during Mr. Drake's absence been entirely in my hands, I may perhaps be allowed here to trench on his ground in a few remarks on the subject.

The method which I have employed is only possible with men to a certain extent acquainted with the language, but appears under existing circumstances to be satisfactory. A native guide or trustworthy attendant is attached to each surveyor. Every name is collected and written in English on the spot, the native in each case being instructed to listen to it. On the close of every day, the names are pronounced in his hearing, in mine, and in that of our head servant, who is able to read, write, and spell correctly. Anything wrong in accent or pronunciation is thus immediately corrected, and all the names written in Arabic, from which I afterwards transliterate them. The final transliteration will, however, depend only on the Arabic letters.

I am convinced that this is, perhaps, the only possible method of proceeding. It was suggested in England that the natives or shaykhs should write the names, but this I found was simply impossible, because not one in a hundred could write at all, and those who could were not to be relied upon for correct spelling. We must remember that even in England the names of the Ordnance Survey are collected with difficulty, as often nearly a dozen different spellings of obscure names will be obtained. When we consider the far greater ignorance of Arab as compared with English peasantry, and the various inducements which fear and hatred of strangers present to lead them to a false answer, it will be seen that to obtain a correct nomenclature is by no means an easy task.

The main difficulties are four. First, that either from a wish to mislead strangers, or from a desire to conceal their own ignorance, or from fear of consequences, or some similar motive, an entirely fictitious name will often been given. Experience alone, and the testimony of

several witnesses, enables us to escape this danger. Secondly, a number of names may be missed by not asking for them, names of trees, plots of ground, small valleys, &c. The only precaution is to instruct the guides to give every name they know in a vicinity, not waiting to be asked. Thirdly, certain names, though undoubtedly genuine, are known to but a few, generally old men. These may very often be obtained accidentally, and are then at once hunted down; but it is difficult to feel certain that *all* are obtained. A very long residence in one district alone would show. Some of them may be important, but the majority are very likely only to be classed with such English names as "Giles's Meadow," "Oak-hill Bridge," &c., &c., which are of no historic value.

The fourth difficulty is in local mispronunciation, which varies considerably, as in England. Thus the Bedouin convert *k* into *g*, e.g., Gagun for Kakun; in other places the letter *kaf* is pronounced *chaf*, and Kefr becomes *Chuffer*, this word being in other districts Kafr or Kufr. These are but instances of innumerable difficulties which have to be overcome, and which require a considerable knowledge of Arabic to understand.

That an immense number of names quite unknown before have been obtained; that in the last month's work Vandevelde's map shows 12 to our 120; that nearly all of these are undoubtedly genuine and correctly placed, is a good deal to say, without committing ourselves to the statement that every name has been recovered, although probably the percentage not collected is extremely small. From experience we are led to conclude that every very prominent object has a name—all villages, rivers, springs, and principal wells; very large trees here and there, mountain tops, pieces of ground of peculiar character, and plains. The principal wadies have, at least, one distinctive name, and opposite to every village the name of the village is applicable; smaller wadies rarely have names. Every ruined site has a well-known name.

As an instance of the manner in which a well-known name may be overlooked, I may instance Bayt Bezzin. This name entirely escaped Mr. Drake, and I only heard it casually in conversation. On a special expedition I obtained the name in various ways from nearly a dozen people. Yet the spot to which it refers, no doubt an ancient site, shows no other marks of ancient work than a large cistern and a few rock-cut caves.

Water Supply.—In the study of Palestine there is no question so important as that of the water supply. Everything now depends and always has depended on the amount of water to be found at any place. The question of the ancient fertility of the country, which has often been so easily settled without reference to existing facts, depends also upon this. The Ordnance Survey is a complete answer on the subject. Many fine springs have been discovered in parts supposed to be desert, and an immense number of ancient reservoirs has been marked upon

it. Had the water supply been naturally more abundant in those times than it now is, such reservoirs for collection of rain water would not have been made, and the investigation of the geological condition of the country forbids us to suppose that springs can ever have existed in certain districts. In the greater part of the country lately surveyed the strata are entirely impermeable, and all the water is carried off on the surface. At Mukhalid, however, two springs are found close to the sea, the water being mixed with the salt wave water when the sea is rough. This is accounted for by supposing that the same impermeable bed here underlies the soft tertiary sand deposits of the shore cliffs. Thus the position of springs here, as in all cases, is of the greatest geological importance.

We come, therefore, gradually to the conclusion that the natural resources of the country, though little known, are also little changed. On the other hand there is constant evidence that the amount of ancient cultivation was originally far greater than it now is. The terraced hill sides, often only half ploughed, show laborious energy which is now unknown. Amongst the wildest brushwood of Carmel and the stony hills of the Beni S'ab, we come again and again upon vineyard towers of huge undressed stones, upon old vine terraces ruined and broken down, upon wine-presses and oil-presses of unusual size. It may therefore be concluded that it is rather to the negligence of man than to any deterioration of soil or climate that the desolation of Palestine is due, a fact strengthened by the rich fertility of the country near Beyrout in a soil poor by comparison with that of Carmel or of the southern plains.

Meteorology.—The 23rd, 24th, and 25th days of May in this year were the hottest experienced in Palestine for many years. At our camp at Bidyeh the maximum in the shade of the observatory read 106·8 degrees Fahrenheit, against 103 degrees, the greatest heat of last year. A steady east wind blew gently all day, and dropping towards the end of the 25th a dead calm ensued. In the afternoon I was waked by a rushing sound, and perceived a whirlwind, the largest I ever witnessed, quickly rolling towards us down the olive groves, licking up dust and leaves and breaking the small boughs. It passed within a short distance of the tents. A horse and a dog belonging to the expedition died simply from the effects of heat and of drinking too much water. All the natives suffered dreadfully, especially as we moved camp on the first day and had a long march. We Europeans did not feel it excessively, principally from our caution as to not drinking during the day. In the plains two or three men were killed by sun-stroke or by thirst. The same heat was felt from Egypt to Constantinople. At Gaza the maximum in the observatory read 116 degrees Fahrenheit. At Beyrout the silkworms were destroyed. All over the country men and beasts suffered severely.

Several phenomena were noticeable this summer in the plains. When the west wind blew, a heavy mist rose in the morning from the plains,

leaving everything clear at about ten a.m. At about noon, or rather earlier, a sea mist began to come 'up, and often rendered the observation of objects on the shore line almost impossible.

The mirage was occasionally very trying, but seems to be less noticeable on days when the wind is in the east. I am led to suppose that absolute temperature alone does not affect it, but that a certain amount of damp is required in the air as well. Thus on one day the east wind in the morning gave less mirage than the cooler west wind after noon.

XV.

JERUSALEM TOPOGRAPHY.

P.E.F. CAMP, BLUDAN, *1st August, 1873.*

I AM at length able to send home the long-deferred plan of rock levels of Jerusalem, which has been from time to time one of the principal points to which my leisure moments have been devoted.

It was Capt. Warren who first pointed out the absolute necessity of discovering in every case the depths below the surface of the rock, and of referring them all to one fixed datum, the level of the sea. In the study of the ancient topography the original appearance of the ground is the first consideration, and although a certain amount of soil must always have existed, and is mentioned as so existing by Josephus, still the ancient surface must have conformed far more closely to that of the rock than it does at present.

For these reasons, almost the first thing to be done in following out Capt. Warren's discoveries was to ascertain the lie of the rock wherever possible. This we are now able to show in about 200 places, thanks to Mr. Schick, who, in his professional capacity of architect, had measured the position when sinking foundations for houses in every quarter of Jerusalem. Being so numerous and evenly distributed, I was able, with the aid of the contours of the surface given in the Ordnance Survey, and with those levels already fixed by Capt. Warren, to extend the system of contours, which he has made for Ophel and the Haram enclosure, over the whole extent of the present city.

By the help of this map we shall be able to calculate within a few feet the maximum depth to which it will be necessary to go in order to reach the rock, and to see how labour may be most easily economised. The comparison of the rock and surface contours shows that the depths will never approach that of the first mines, and may on an average be taken at 20 to 30ft. The Haram stands on a steeply sloping ridge, the Ophel wall hangs over a deep valley, and the great bridge spans another. Thus Captain Warren's work lay in the parts of Jerusalem where work was most difficult and costly. Future excavations would

only have to be made in such parts of the town as preserve at the present day more approximately their former condition.

Thus, although excavation at Jerusalem has been for awhile suspended, the year was not without valuable work. We have a basis now on which to form a judgment of the best way to attack in future the remaining points of interest which no doubt await discovery.

Several new and interesting points at once suggest themselves on an inspection of the map, and to show these better I send a reduced shaded sketch of the original rock site of the town. Reading the famous passages of Josephus by the light of this new map one cannot but be struck with the accuracy of his descriptions.

Jerusalem, he tells us, stood on two hills, the one opposite to the other, divided by the Tyropœon. That crest (*λοφος*) which supported the upper city was much higher and longer. The other, on which the lower was built, was smaller, and rising to a peak (*αμφι κυρτος*), a description mistranslated "horned like the moon." Besides the Temple hill there was a fourth directly north of it, and divided by an artificial ditch from it, and from Acra by a broad valley, which was filled up by the Asamoneans when they lowered the height of some part of the latter hill which overlooked the Temple.

Referring to the plan we find this description fully carried out. The modern Zion, a large flat-topped hill surrounded with deep valleys, and having a level of about 2,550 to 2,500ft. above the sea. North of this and separated by a broad and very deep valley running down to Siloam, as Josephus describes the Tyropœon, is a much smaller hill, whose summit is not over 2,480, and which, whilst absolutely lower, would appear much more so, because the whole site is, as it were, on an inclined plane, and because the height from the summit of the former to the bottom of its surrounding valleys is far greater than that of the latter.

The Temple hill, already known, will be seen to be separated from a fourth on the north, separated in its turn from the Acra knoll by a broad valley which runs out at the Damascus Gate. We can have but little hesitation in identifying this with the hill Bezetha of Josephus.

Not only is the general description carried out, but several of the details also. The Temple hill was defended, we learn, by a valley and a ditch on the north, cutting off Antonia from the hill Bezetha. This valley Captain Warren traced running north-east and south-east, and coming out just north of the Golden Gate. The rock contour, 2,420 near the north-west corner of the barracks, attests the existence of a narrow trench separating the northern hill from the rocky scarp on which the barracks stand. It is more than probable that the Birket Israel in the middle of the valley, to which the expression of ditch has hitherto been supposed to allude, formed no part of the original design, and that the real ditch thus discovered was cut in that part where no natural valley existed. The rocky scarp south of this, now fixed on the

north, south, and east, will be immediately accepted by many as that scarped rock upon which Josephus tells us the fortress of Antonia stood.

One other very important and curious point remains to be noticed. It will be seen that a narrow ridge runs north and south, immediately east of the Tower of David, and separates as a shed the broad head of the Tyropæon from the western valley of the Birket el Sultan. The former valley deepens very suddenly, and in the line of the church of the Holy Sepulchre its lowest part is more than 100ft. below the crest of the modern Zion.

This is a very important indication, Robinson, Williams, and De Vogüé, with, in fact, almost every writer on Jerusalem topography, have drawn the north line of Josephus's first wall from the Tower of David to the west Haram wall. The great question to be settled is at what point between these limits the Gennath Gate and second wall were to be found. Now no point could be so likely as that marked by the ridge along which the wall would run on ground commanding all without it, and the sudden fall and unsuspected breadth of the Tyropæon valley make it more than doubtful that the line should be carried farther east to cross the valley, when a ridge without the *enceinte* would of necessity command the whole length of the fortification.

Small discoveries continue to be made at Jerusalem. On the cliff in the immediate neighbourhood of Jeremiah's Grotto are a number of rock-cut channels running towards the aqueduct of the royal cavern. These are of importance for two reasons: first, as showing that a part, if not all the water in the great aqueduct, was supplied by the surface drainage; secondly, because this abrupt termination seems to show that the present gap between the scarped rock at Jeremiah's Grotto and the so-called north-east angle of the city wall above the royal caverns is a subsequent alteration. Probably the quarries extended the whole distance, and were cut through to allow a command for the fortifications, which would otherwise have been impossible.

Immediately north of this point other remains of some interest have been discovered by Mr. Schick. There is a rock scarp running east and west, marked on the Ordnance Survey between the contours 2,419 and 2,409, close to a road north-west of Jeremiah's Grotto and near an old cistern. In this scarp a chamber was found square cut in the rock, without loculi, and with two crosses in red paint on its walls. It has been subsequently used as a tomb, and the ground is full of bones and skulls in its neighbourhood. Tracing the scarp, Mr. Schick found indications of piers supporting arches running transversely and parallel to the rock. Near the cistern vaults are said to exist, and in an excavation in the neighbourhood some large stones about 2' 6" x 2', and the foundations of a pier of masonry, are laid bare. There can be no doubt, it would seem, that a large Christian building here awaits examination by the Fund. The only question is what it can be.

The site of the martyrdom of St. Stephen, though now without the

gate (Bab Sitti Miriam) which bears its name, was placed by a very ancient tradition about a furlong without the Damascus Gate. In the middle of the fifth century the Empress Eudoxia erected a church here in his honour, in which St. Saba was buried (Quaresmius ii. 295). Antoninus, of Piacenza, in sixth century, St. Willibald in eighth, St. Bernhard in the ninth, all agree in giving the same position to the site. In the twelfth, the church destroyed by the Arabs was rebuilt by the Crusaders on the same spot. The gate was then known as Porta S. Stephani Septentrionalis. The church was on the west of the great north road, all pilgrims passing immediately by its door; it had a monastery attached, and opposite to it on the east of the road was the Asnerie. "La solait jesir li asne et li sommier de la maison de l'Hôpital pour ce avait à nom l'asnerie" (La Citez de Jherusalem). The church the Crusaders themselves destroyed in 1187, but the Asnerie remained, and was used as a khan by the Saracens, when all traces of the other buildings had disappeared under a dunghill.

From its position and distance from the walls this newly-discovered building may possibly be the remains of the Crusading Asnerie. Ruins of the church may still perhaps exist on the west side of the road beneath the great depth of modern rubbish.

The repairs now going on in the Kubbet es Sakhrâh have given two interesting additions to our knowledge of the place: first, the Cufic inscription on the beams, mentioned by Dr. Chaplin in a late number of the "Athenæum," and sent by him to the Fund; secondly, the uncovering of the base of two of the pillars of the octagon. I have already pointed out in a former report that the "stools" on which the pillars were supposed to stand, and upon the character of which an architectural argument has been partly founded, were nothing more or less than slabs of marble built round the shaft and hiding its base. This is now finally proved by their removal, and a base is discovered within, apparently not belonging to the shaft, as a couple of bands of lead, giving a thickness of $1\frac{1}{2}$ in., are introduced no doubt with a view of equalising the height of columns of various sizes. From this it would appear that all the pillars of this building are torn from some older edifice, perhaps from more than one, dating probably about the fourth century, and have been placed in their present position by those who built the dome.

The only other work of interest now going on in Jerusalem is the clearing out of the magnificent vaults of the Muristan. Huge piers of stones with a rustic boss are traced down to their rock foundations in the Tyropœon. There are a series of rock-cut steps in part, which seem probably anterior in date to the buildings. Straight joints and other indications point to two if not three distinct dates of building. Mason's marks are found only on the finest and best finished stones. The work, which is a costly and important one, will not be completed for another year.

CLAUDE R. CONDER, Lieut. R.E.,
Commanding Survey Party, Palestine.

LETTERS FROM DR. CHAPLIN.

JERUSALEM, Aug. 1st, 1873. 1

SIX or eight more rafters of the roof of the outer corridor of the Dome of the Rock have been found to have Cufic writing upon them. The words appear to be the same on all, but some are partially obliterated. I send you a copy. The writing appears to be a direction to El Saïdy, by order of El Muktader Billah. Probably this timber was sent down from the north, like that used in the first temple. El Saïdy seems to have been a Mohammedan Helena in a small way. There can hardly be a doubt that this roof was either made or repaired by order of Jafr, and a discovery that I recently made renders it certain that either there was no roof there before, or that it was not on the same level as at present—namely, that there is a very old carved wooden cornice still running round the building in the space between the ceiling and roof of the outer corridor on the inner wall of the latter, just above the ceiling. The accompanying diagram will explain its position. It cannot, of course, be supposed that an elaborate cornice would be constructed to be out of sight.

Another point which I do not remember to have seen noted is that the present cornice below the ceiling rests against the mosaic *and cuts the tops of the letters*, and must therefore be of later date than these.

The reasons which lead me to think it possible that the outer corridor may have formed no part of the original building are these:—

1. The stumpy appearance of the whole building, the base being (at least to my unprofessional eye) too broad for the height.

2. The statement that the Kubbet el Silsileh was the model for the greater Kubbet, which would be only partially true if the latter were originally built of its present form.

3. Such glimpses as we have occasionally got of the masonry of the outer wall seem to show that it is probably of later date, and

4. The certainty that now exists that the roof to which these inscribed rafters belong is of later date than the wall over the arches which form the outer boundary of the inner corridor, and the absence of evidence (so far as I have been able to discover) of a roof having preceded it.

The Cufic inscription, of which I enclose a copy (No. 2), may throw some light upon this question. It is from a stone on the inner surface of the outer wall, and forms part of the ornamental band which runs round the whole building on a level with the tops of the doors. If the date of this inscription is later than 72 of the Mohammedan era, it would afford a strong presumption that the wall is also later, there being no indication of its having been subsequently put in.

I send you also a bit of Greek inscription from a slab from the coping of the parapet of the outer wall of the Dome of the Rock.

More than twenty mortuary chests have been discovered in rock tombs lately opened on the Mount of Offence. I forward plans of the tombs, and copies of the writing on the chests. The latter are neatly executed,

some being plain, others ornamented, but none so elaborately carved as that figured on page 494 of "The Recovery of Jerusalem." Some have flat, others raised lids.

The absence of Christian emblems, and the presence of Hebrew characters, is interesting. I have sometimes questioned whether some of these chests, about whose history so little is known, may not contain the bones of Jews, transported from other lands by pious friends, but I do not remember to have seen Hebrew characters on them until now. On the other hand, the inscription No. 1 might well enough pass for 1610 A.C.

They all contain bones, which fall to pieces on being touched. Entire skeletons *in situ* were also found in several of the loculi, but not a vestige of clothing or (according to statements made to me) an ornament of any kind.

THOMAS CHAPLIN.

JERUSALEM, Aug. 6th, 1873.

By the Austrian mail of last week I forwarded to you copies of several inscriptions of some interest, and in the hurried note which accompanied them omitted two things.

1. I forgot to mention that perhaps Mr. Palmer and Mr. Drake have already taken a copy of the Cufic inscription from the outer wall of the mosk, and that I sent a copy to Mr. Drake two mails ago asking him about it.

2. It quite escaped my memory (it is only with great effort that I can give any time to these things at this sickly period of the year) that the bronze of the doors of the mosk (Dome of Rock) bear inscriptions with the date 216. This of course precludes the possibility of Jafir having been the first to make a roof over the outer corridor.

The top of the outer wall ought to be examined, but it is not easy to get at it. Possibly next week I may be able to see what can be made of it.

I cannot find that anything is written in the Arabic histories about Jafir having repaired the Dome of the Rock, but others, better acquainted with the subject, and with more time at their disposal than myself, may be more successful in their search.

My Arab friends read the inscription from the beam differently from what I did. According to them the line would run, "To God El Saïdy, mother of El Muktader Billah."

THOMAS CHAPLIN.

NOTE ON THE ABOVE LETTER.

We are indebted to Prof. E. H. Palmer for an accurate translation of the Cufic inscriptions lately found on one of the beams in the roof of the outer corridor of the Dome of the Rock. The inscription was copied by Dr. Chaplin, and also by Mr. Schick, and runs as follows:—

"In the name of God. Grace from God to the servant of God, Jäfer

el Muktader Billah, Commander of the Faithful—may God spare him to us. According to the order of Essaiyideh (may God aid her), and it was performed by the hands of Lebid, a Freedman of Essaiyideh, and that was in one and”

Unfortunately the inscription becomes illegible at the date; but Prof. Palmer states that he has found in an Arabic historian an account of the restoration and repairing of all the Mosques and Masjids in the Empire, by Ali Ibn Isa, vizier to El Muktader, in the year of the Hejira 391 (A.D. 913), to which this inscription probably refers.

We hear from Dr. Chaplin also that the aqueduct from Solomon's Pools is now restored, that the fountains in the court-house, Makhama, the Kas in the Haram, the Birket el Naranj, and the Bab el Nazir, are all running over with fresh water.

The repairs in the Haram are proceeding steadily, the Sultan having sent £30,000 for expenses, under the direction of an Armenian builder from Constantinople. In the outer wall of the Dome of the Rock has been found a portion of a Latin inscription, on marble, but in a fragmentary state.

Lieut. Steever, of the American Expedition, has informed Dr. Chaplin that he could get no pottery in Moab like that in the Shapira collection.

THE SAMARITAN STONE AT GAZA.*

My curiosity was first stimulated in searching after inscriptions by observing the extraordinary amount of energy exhibited by M. Ganneau, who visited Gaza about three years ago. I accompanied this gentleman to several interesting parts of the town, and assisted him in procuring a few Greek inscriptions. We also visited the same spot where the stone was discovered, which is distant from the town about a mile, and half a mile from the sea-shore. It has now been in my possession about a year, and was found in one of the numerous sandpits where excavating is carried on by the natives to obtain stone for building purposes.

About a year ago, passing by the same spot, I questioned some of the labourers then at work about stones bearing inscriptions, &c., and was informed that a few days before three of this description had been found. After making further inquiries I succeeded in finding out to whom they had been sold, but having to act very cautiously, in order not to excite suspicion, I regret that I was obliged to delay the matter too long; and upon opening the question about the stones the owner coolly told me that he had *scraped* the two largest! and the other, I suppose, not being large enough for the purpose required, was thrown aside, to share the same fate at some future time. However, after some difficulty I succeeded in getting it; this is the whole history of the stone.

* See *Quarterly Statement*, July, 1872, p. 118.

About two months ago three marble pillars were discovered in one of the sandpits before mentioned; they are all of the same size and architecture. A drawing of these might likewise be interesting. About a month ago I also found in the town a lamp similar to the one found in the Pool of Bethesda, with this exception: at the broadest end in bas relief is something not unlike a serpent's head.

Many curious seals are at times found here and about the district of Gaza. I might send you sealing-wax impressions of some of these if you think they would be of any interest. I shall always be very glad to keep you duly informed of everything that may be found at Gaza, and supply you with copies, &c.

J. G. PICKARD, *Gaza*.

STATE OF THE RUINS OF BAÄLBK.*

Extract from a detailed report by Lieutenant Conder, R.E.

It being necessary, during the extreme heat of summer, to suspend the outdoor work of the Survey for some weeks, and to move the camp to the cooler mountain region of the Lebanon, the Committee requested Lieutenant Conder to devote some portion of the time spent in that district to a careful examination of the ruins of the magnificent temples of Baälbek, which are reported by travellers to be in a most precarious condition, especially the group known as the "Six Great Columns." Letters on the subject have appeared during the last two years in the *Times* and other papers from Mrs. Burton, Mr. Julian Goldsmid, Mr. Crace, and others. This "vacation task" Lieutenant Conder has undertaken with energetic enthusiasm, and he has now sent home a report, dated August 22, giving most careful technical details of the defects, and consequent risks of each column of the "great" and "lesser" temples, with such dimensions and other information as will make it a valuable document to any who may desire to ascertain whether it be possible to delay the impending destruction of these splendid monuments. The subject not being directly connected with the work of this Fund, the Committee do not propose to print the whole report, which, however, will be made available to those specially interested. They think, however, that the following extracts will prove interesting to many subscribers. Lieutenant Conder says:—

"My attention was directed to three principal objects—1. The condition of the key-stone of the great lintel of the Temple of Jupiter. 2. The condition of the peristyle of the same. 3. The condition of the six remaining columns of the Great Temple.

"1. The eastern doorway of the (so-called) Temple of Jupiter is 21ft. wide, and 42ft. high in the clear. The jambs are huge pilasters, in three courses, containing interior staircases. The lintel consists of three

* The report will be found at length, and fully illustrated, in the *Builder* of October 4.

stones, the central key-stone being slightly tapered, as in an arch, and apparently once held in place by metal clamps. The stone is a hard, compact, non-fossiliferous, white limestone. I have taken its specific gravity roughly at 2.5 in order to approximate the various weights, but send home a specimen to allow of their being more exactly determined. The key-stone measures 10ft. 10in. in height, 12ft. in thickness (front to back), and has an average breadth of 6ft. 5in. It must, therefore, contain approximately 858 cubic feet, which will give a weight of about 60 tons. . . . It has slipped down rather more than half its depth from its original position, and on the south side only about one quarter of its side bears against the other block, which is broken away below. A wall of roughly squared stones (of about a foot cube), in mortar, has been built under the key-stone by the Turks, and appears to be a suitable and sufficient support. The only objection to be made to it is that the soffit of the stone is thus covered, and the eagle invisible. Should it be proposed to raise the lintel to its former position, the superincumbent stones, each weighing about 20 or 30 tons, must first be removed. I did not observe any indication of present danger, except from the jar which the fall of the smaller stones of the cornice might give. The other blocks of the lintel appear to be safe. The fall of the key-stone is probably attributable to the removal of the metal clamps, and to subsequent shocks of earthquake.

"2. *The peristyle.* On the north side nine columns remain, with roofing; on the west, three, with only the entablature; on the south, four, and two of the fluted inner row which ran from the antæ and in front of the temple on the east. Judging from a fallen column the heights are as follows:—

			Ft.	In.			Ft.	In.
First stone	...	...	22	5				
Second	...	...	14	11				
Third	...	...	11	3				
			———			Shaft	...	...
						Capital	...	...
						Base	...	...
							48	7
							5	11
							3	4
							57ft. 10in.	

The diameter at the base is 5ft. 7in., and at the capital 5ft. The intercolumniation is 8ft. 10in., and the width of the peristyle, in the clear, the same."

Lieutenant Conder then gives the dimensions of the entablature, and calculates the weight of that and the roofing as equivalent to "a crushing weight, on each pillar, of 105½ tons, or 4 tons per square foot." "The centre of gravity of this weight is easily calculated, and will be found to pass through the centre of the pillars." He then goes on to describe, in detail, the condition of each pillar of the peristyle, by aid of a figured plan. Almost every one of them has been much injured both by man and earthquake, as well as by natural decay, and most of them have been excavated at the base, by the Arabs, for the sake of the metal pin, which has been abstracted from the centre.

The general conclusion is arrived at that the two external columns on the north side are in a dangerous condition,—“the next to them are cracked and overloaded, and the remainder, though at present safe, would suffer in the same manner, from unequal loading, on the fall of the outer. The condition of the entablature is also unsafe.” Lieut. Conder also calls attention to the risk to the columns at the south-east angle of the temple, caused by the Saracenic tower built over that portion, and which causes a serious overweighting of the lower structure. He suggests the removal of this later superstructure, but allows that it would be a work of difficulty.

Perhaps that part of the report which treats of the condition of “the six great columns” will be deemed most interesting, as their danger is also more imminent. Lieut. Conder describes the causes of danger with great care, and in detail he says:—

“The diameter of these columns is 7ft. 6in. at the base; the height (according to Murray, who gives the diameter and entablature correctly) is 75ft. including base and capital.” The entablature is (in design) exactly similar to that of the former temple, and its centre of gravity is at a distance of 3ft. 3in. from its north side, thus bringing its greatest weight on the south side of the columns. “The columns are exposed to the full force of the northern and westerly gales, and have suffered far more on these sides. They are shattered from top to bottom, and are flaking off rapidly. They appear to have been subjected to the effects of frost as well as of rain and wind.”

Lieut. Conder then enumerates the columns, commencing from the west end of the group:—

- No. 1.—Has two pieces excavated just above the base; one to a depth of 2ft. 3in. A piece flaked off 10ft. high and 1ft. deep, and a large piece containing about 70 cubic feet cracked off the base.
- No. 2.—Has an excavation 2ft. 6in. high, 2ft. deep, and about 3ft. wide; all three stones of the shaft are shattered, and flaking on the north side.
- No. 3.—About 56 cubic feet cracked off the base block. A piece about 2ft. thick cut out across the base of the shafts, and large fragments peeled and flaked off.
- No. 4.—This pillar is very infirm. Large flakes have fallen off, and the cracks show that more will follow. At the bottom only about half the diameter is left.
- No. 5.—Has a large piece chipped off the base, and very serious fractures in the highest and lowest blocks of the shaft.
- No. 6.—Is the most “shaky” of the group. Large pieces have been cut out above and below; and “underneath the base a stone has been abstracted measuring about 40 cubic feet.” This column is likely to fall in the first great storm, and to bring down No. 5 with it.

Lieut. Conder gives many additional details and measurements, accompanied by explanatory diagrams. But his report will be published with

his illustrations in *The Builder*, to which periodical we may refer such of our subscribers as may be more specially interested in the question of the possibility of preserving these grand remains to another generation. The subject is, strictly speaking, outside the objects of the Fund, but, opportunity offering, the Committee directed the attention of their surveying officer to the subject, and requested his report, feeling that the matter was urgent, and that, having so competent an officer on the spot, they might, at small sacrifice, render an important service to archæology and art.

NOTES FROM MR. CL. H. GREEN ON THE GEOLOGICAL SPECIMENS SENT HOME BY LIEUT. CONDER.

I HAVE at last found time to look over the geological specimens which Lieut. Conder has sent home from Palestine. The parcels are numbered up to 42, but there are none of the numbers 3, 9, 11, and 13.

Fourteen of the specimens contain fossils. Without help and books of reference, which I cannot get here, I cannot determine these; some are certainly of Cretaceous, and some probably of Jurassic or Oolitic age. When I am in London, towards the end of the year, I dare say I shall be able to give you a more detailed description, and the names of some of these fossils; others which are imperfect, or only in the state of casts, will scarcely be determinable specifically.

Ten of the parcels, Nos. 1, 6, 27, 28, 29, 30, 31, 33, 35, and 42, are specimens of volcanic lavas and ashes. With one exception, No. 42, which is a trachyte, and not taken from a rock or place, all the lavas are doloritic in mineral composition; their structure also seems to indicate that the outpourings were subærial, or, if they flowed under water, that it was of no great depth.

There are two specimens of sedimentary beds, from volcanic localities. No 2, a red calcareous sandstone from Shayk Iskander, and No. 32, consisting of thin laminæ of similar sandstone and green marl, with layers of fibrous carbonate of lime, from Ikzim. These have the look of deposits formed in a lake; there is nothing to show whether they are interstratified or not with the volcanic rocks. Possibly they indicate a similar state of condition to those under which the rocks of Auvergne were formed where there are alternations of lacustrine strata with volcanic ash and lava. In the same parcels are many fragments of white calcareous tufa, which look like portions of veins that have been deposited by percolating water in the cracks of the lava. All the volcanic rocks are saturated with carbonate of lime produced in this way. The date, or dates, for the volcanic eruptions of Palestine took place at different times, and must be determined by the geological structure of the country; it is probable that all are younger than the Lower Tertiary, or Nummulitic beds, and I should not be surprised if many turn out to be of Middle Tertiary, or Miocene age.

There are also a number of specimens of rocks, on the beach formed of shingle and other fragmentary materials cemented by carbonate of lime. These are associated with broken bits of pottery and glass, and are therefore of modern date, and perhaps still in the course of formation.

I have had another letter from Lieut. Conder, and have replied to it at length, pointing out to him what I think are the meanings of the observations he has so far made, and directing his attention to the points which it is of most importance to notice.

Sept. 18, 1873.

CL. H. GREEN.

EXTRACT FROM A LETTER FROM THE AMERICAN ASSOCIATION.

LATE advices from Syria (in advance of official dispatches), by letter of Lieutenant Steever, commanding expedition, dated July 14th, furnish information of the highest interest. The expedition reached Moab on the first of April, and fixed their camp at Hesbân. Fifteen miles from here, a favourable location having been found, a base-line was satisfactorily measured and established. This done, nearly four hundred square miles have since been triangulated, and the detail of the same almost completed, including the hill shading. The heights of all points within the triangulation have been ascertained, and elevation above the levels of the Dead and Mediterranean Seas well obtained.

Meteorological observations have been regularly taken. It is found that the maps—Van de Velde's, even—of this country are utterly worthless and unreliable. This is not strange, since this region of country and portion of the Holy Land have been nearly inaccessible to travellers. Nor would it be safe now, probably, except by a well-organised expedition.

The archæological and scientific departments of the expedition have also been very successful.

Professor Paine has diligently and zealously pursued his researches and studies. He has already prepared a voluminous report, which has been forwarded through the official channel of the Society at Beirût, on the identification of Nebo and Pisgah. To say nothing of his other discoveries, this alone is a great achievement. Every day's work in the field has revealed to them ruins heretofore unknown and unmentioned by any traveller. The Bedawin tell of the ruins of cities a few days' journey to the south and east, which it is impossible now to visit. The whole country from Kerak to Hauran is in a very disturbed state, in consequence of hostilities between the different tribes. The expedition would soon go into summer quarters. Lieutenant Steever advises resumption of work in autumn rather than wait till the spring.

July 20, 1873. *Palestine Exploration Society,*
26, Exchange Place, New York.